A.
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B. Describe the strategy you implemented for having each player work toward a monopoly. Write this in prose so that a non-technical person would understand the approach you took for trading toward a monopoly. (200 words maximum)

In a new Hand of transaction, each player has randomly assigned some cards. We assume that the initial amount of each type of communities in hand are not equal. And we will choose the type of card (called monopoly-card) with the mode number as the type of card we will collect in the future.
If we get a trade offer, we need to accept the offer is the type of card is just my monopoly-card. Otherwise, we just reject the offer.
If we keep accepting only one type of offer from the initial state, we eventually will have only one type of community in hand.
When we make a offer, we only use the non-monopoly-card for trade. If we have reach the monopoly, we randomly pick one card to trade.
This logic is feasible, because we assume that the total type of communities is larger than or equals to the number of players. That is, the type of card with the highest amount in my hand must be higher than the amount of that type of card in all other players' hand, so it is easier for me get monopoly.

C. Looking at your sequences of 10 snapshots, perhaps run several or many times, describe what you find interesting about any patterns of players moving toward achieving monopolies. How well did these patterns match or not match what you expected of your strategy? How well did your strategy result in one more players achieving monopolies? (400 words maximum)

1. I find that at the very beginning, the number of each community in one player's hand is very close to total number of one community / total player. For example, if number of players is 12 and communities have 6 types, the number of one community is 2.
   And with the increment of the # of snapshot, the number of one type of community keeps increasing and the number of type of communities in each player's hand is closer to one.
   When one kind of community in hand dominates, the number of that card will keep increasing until it reaches the total number.
2. The patterns matches my expectation. The pattern is just a trend for every one to become monopoly, with the law of larger number, if we keep accepting what we want and selling what we dislike, we will finally reach a stable situation. Sometimes, at the 10^{th} snapshot, one player will have 11 number of one community and 1 another community, but mostly at the 10^{th} snapshot, each player will become monopoly. The reason why we cannot always make all players monopoly is that, although we can control the type of card we accept, we cannot control the type of card the counterpart player gives us as payment for community that we do not want when we sell cards.

3. At the 10^{th} snapshot, there is always at least one player reach monopoly. Other users will always get at least total number of number of one type of community – 1, i.e., 11.